

FAQ for Regulated Entities

Q. My facility land applies biosolids in the spring and fall and generates less than 320 dry tons per year. Why are we required to sample once before each hauling period (twice per year) when R 323.2412, Table 7, of the Michigan Part 24 Rules requires facilities that generate less than 320 dry tons per year, to collect and analyze a minimum of 1 sample per year in each year they land apply?

A. There are certain circumstances when additional samples need to be collected beyond that required in Table 7. One of those circumstances is described in R 323.2406(1), which requires that a person collect and analyze representative samples for the biosolids that are applied to the land. Therefore, if a facility land applies seasonally (i.e., spring and fall), then data collected prior to the spring hauling period would not necessarily be representative of the material hauled in the fall. Under this scenario, 1 sample would need to be collected before each hauling period (total of 2 samples) in order for the data to be representative of the material land applied. If a generator removes biosolids monthly or more frequently, monitoring is required at least once per month each month that the biosolids are removed. Section R 323.2412(3) does allow the permittee to petition the Department of Environmental Quality (DEQ) for a reduced sample frequency after 2 years of monitoring.

Q. My facility generates about 400 dry ton tons per year and collects quarterly samples as required for facilities that generate over 320 dry tons. This year my fourth quarterly sample had concentrations of cadmium above Table 3. Pollutant Concentrations of the Part 24 Rules. I understand that R 323.2412(4) of the Part 24 Rules requires that if pollutant levels exceed Table 3 concentrations, then the sample frequency shall double that provided in Table 7. In this scenario, are we required to collect a total of 8 samples in the same reporting year and how long do we need to continue the double sample frequency?

A. The double sampling requirement is not based on the reporting year or calendar year; it is based only on the frequency of sampling. Therefore, in the scenario presented, if your fourth quarterly sample is above Table 3 concentrations, then you would be required to begin the double sample frequency for the parameter over the Table 3 concentrations. In other words, instead of collecting your sample every 3 months (quarterly), you would need to double that frequency and collect your next sample approximately 1½ months later. If this sample result came below a Table 3 concentration, you would then return to the regular first quarterly sampling. If this first quarterly sample was again above Table 3 concentrations, then you would need to continue the double sample frequency (every 1½ months) until concentrations are at or below Table 3 concentrations.

Q. We are preparing to remove the biosolids from our lagoon and land apply them next spring. Based on our calculations, we have less than 320 dry tons of material to remove. We have not land applied biosolids in the last 5 years. Why does the Residuals Management Program (RMP) Development Document require a minimum of 3 biosolids samples?

A. The federal requirements contained in Title 40 of the Code of Federal Regulations (CFR), Section 122.21(q)(7)(ii), state, in part, that biosolids applicants “. . . must provide data from a minimum of three samples taken within four and one-half years prior to the date of the permit application. Samples must be representative of the sewage sludge and should be taken at least one month apart. Existing data may be used in lieu of sampling done solely for the purpose of the application.”

Therefore, a minimum of 3 samples is required for facilities without prior analytical data. However, additional samples could be required under certain circumstances, as in the case of: (a) a facility land applying over 320 dry tons, (b) to obtain representative data as in a lagoon with 4 or more separate cells (unit processes), or (c) a facility with metals concentrations in excess of Table 3 concentrations.

Q. I understand that 40 CFR, Section 122.21(q)(7)(ii), requires biosolids applicants that generate less than 320 dry tons per year, collect a minimum of 3 samples for analysis. However, part of that citation states that the samples must be taken at least 1 month apart. I do not understand how requiring the samples to be 1 month apart would be useful for a wastewater stabilization lagoon system. Am I interpreting this requirement correctly? Are lagoon facilities that are wishing to land apply required to collect a minimum of 3 samples 1 month apart from each other?

A. For a lagoon not accepting additional wastewater or sludge, waiting between samples is not necessary. The objective is to obtain representative samples from the entire lagoon. This could be composite samples taken from multiple locations of the lagoon, or multiple samples analyzed separately and then averaged. In a wastewater stabilization lagoon where solids will be removed from the bottom of one of the cells, the cell should not accept additional wastewater and then use the above composite or multiple samples.

Q. I am preparing to remove and land apply biosolids from one of our lagoon cells and collected 3 good composite samples for analysis as required. One of the 3 samples had cadmium concentrations slightly above the Table 3 concentrations. If I average the analytical result, they are well below Table 3 concentrations. Since the biosolids in the lagoon will be well mixed prior to pumping into the tanker for transport to the site, is averaging the results to stay below the Table 3 concentration acceptable?

A. Yes, as long as the 3 samples were composites collected from multiple areas of the same cell and the material is well mixed prior to land application. The average of the three composite samples should be representative of the material to be land applied.

Q. What is the appropriate method for calculating agronomic rate for applying biosolids?

A. Michigan Part 24 Rules defines agronomic rate, in part, as “the calculated biosolids application rate which provides the amount of plant-available nitrogen (PAN) needed by the crop or vegetation grown on the land . . .” The two most commonly utilized methods for calculating PAN in Michigan are the 1 year PAN and the multiyear PAN methods. Michigan recommends facilities utilize the multiyear PAN, which involves calculating the amount of mineralized nitrogen that becomes available from land application having occurred to the site in the previous 3 years.

Guidance on calculating multiyear PAN can be obtained from Appendix E of the RMP Development Document.

Calculating agronomic rate also requires determining the nitrogen needs of the crop for a realistic yield goal. Nitrogen needs of the intended crop can either be obtained from Michigan State University Cooperative Extension Bulletin or directly from the soil test. However, if you base application rates on the soil test, you need to make sure those nitrogen recommendations are consistent with those of Michigan State University.

Determining realistic yield goals can be more difficult. Field records are the best source for crop yield estimates. Where field records are not available, you can make first-year estimates for a project using Natural Resource Conservation Service (NRCS) soil surveys or county production averages. County production averages can be obtained from the Internet at <http://www.nass.usda.gov/quickstats>.

Q. What is the appropriate method for determining useable site acreage?

A. Determining the accurate acreage of a land application site is a critical component of accurately applying biosolids at the agronomic rate. Simply relying on the farmer’s estimate of acreage is not recommended as farmers will frequently over estimate and sometimes underestimate useable acreages. The DEQ suggests that land applying facilities or their land application contractor double check the farmer’s estimate of useable acreage with commonly available measurement tools such as a Global Positioning System or a computer-based mapping program. The NRCS offers a free Internet site that allows access to aerial photographs overlaying soils mapping program that includes a useful site measuring function. This site can be found at <http://websoilsurvey.nrcs.usda.gov/app/>.

Q. When we are land applying biosolids for more than 2 days in a row, why are we required to collect daily biosolids samples for percent total solids even though we have a percent total solids value on the sample we analyzed for metals?

A. When the land application period lasts for more than 2 consecutive days, the DEQ has found that the percent solids analysis provided on the analytical report for metals and nutrients is often not representative of the percent total solids of biosolids actually land applied. Because R 323.2406(1) requires that a person collect and analyze representative samples, the DEQ typically does require daily percent total solids analysis, unless information can be provided demonstrating that the initial data is representative (i.e., mechanical plant with good mixing). The daily percent solids results should be utilized when calculating daily application rates and reporting dry tons land applied.

A related issue regarding lagoon cleaning projects is that the composite samples collected for the RMP approval often overestimate the concentration of available nutrients and underestimate the total percent solids of the biosolids being applied to land after a few days of cleaning operations inside the lagoon. This phenomenon is likely due to the mixing of the biosolids with the clay particles from upper portions of clay liners disrupted from equipment working inside the lagoon. To address this situation and provide the most representative data possible (in addition to the sampling for metals, nutrients, and fecal coliform prior to beginning the project), the DEQ have begun requiring the sample plan in the lagoon RMP to include a commitment to analyze a minimum of 2 additional composite samples for available nutrients in addition to the daily percent solids collected during the course of the lagoon cleaning. This data should then be used in reporting dry tons and nutrients land applied.

For more clarification on this requirement, please contact your District DEQ Biosolids Specialist.

Q. Can I temporarily transfer one of my listed land application sites to a neighboring wastewater treatment facility?

A. Temporarily transferring a site is not allowed, but you may relinquish a site to another facility. R 323.2413(2)(c) states, in part, that “. . . biosolids from other sources may be land applied to a site only after that site is relinquished in writing to another generating facility.” The facility relinquishing the site must sign an agreement, and the facility receiving the site will need to submit a new site ID package indicating on the site ID form that this is a “repermit.” The signed relinquishing form and the revised site ID form with all the attachments should be submitted to the DEQ District Office just as it is done for a new site. If, after 1 growing season, the original facility wishes to enroll the land application site back into their program, they must follow the same procedure.

Q. I am a land application contractor and have been hired to help a community prepare an RMP for a lagoon cleaning we will be conducting. In order to save time, is it acceptable for us to submit the RMP on behalf of the community and have the facility sign the signature page and fax it to the DEQ District Office?

A. Yes, it is acceptable as long as an original hard copy of the signature page is later submitted to the DEQ and the facility receives a copy of the entire approved RMP. The facility should be instructed to retain a copy of the entire RMP and understand its contents, as the generator is ultimately responsible for the enforceable commitments in the RMP.

Q. In the isolations distance requirements in R 323.2410(11), Table 6, there appears to be some inconsistency in the definition of “municipal wells (type I or type IIA)” and the isolation distance requirements of “public water supplies (type I or type IIA)” in R 325.10812 of the Administrative Rules promulgated under the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399). Can you provide some guidance in defining the appropriate setbacks?

A. The Part 24 Rules defines the term municipal well (type I and IIA wells), in part, by stating “As defined and specified in Act No. 399 of the Public Acts of 1976, as amended . . .” Since the Part 24 Rules definition of the term municipal well cross references Act 399, it is thereby interpreted the same as “public water supply (type I and IIA wells).” Therefore, the 2,000-foot required setback requirement in the Part 24 Rules applies to any type I or type IIA public water supply well.

The DEQ provides the following suggested ways to identify the location of potential public water supplies from any prospective biosolids land application sites.

- Drive around any sites to closely survey the surrounding area for potential public water supplies such as schools, restaurants, industries, and condo developments.
- Include a sentence in the 10-day notification letter to the township and county health department specifically requesting that you be advised if any public water supplies exist within 2,000 feet of the proposed site.